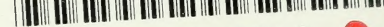


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# FROZEN EGGS

## HEARING

BEFORE THE

*U.S. Congress, Senate.*  
COMMITTEES ON AGRICULTURE AND FORESTRY,  
CONGRESS OF THE UNITED STATES

SIXTY-SIXTH CONGRESS

THIRD SESSION

ON

### H. R. 9521

A BILL TO PREVENT HOARDING AND DETERIORATION OF, AND  
DECEPTION WITH RESPECT TO, COLD-STORAGE FOODS, TO  
REGULATE SHIPMENTS OF COLD-STORAGE FOODS  
IN INTERSTATE COMMERCE, AND FOR  
OTHER PURPOSES

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# FROZEN EGGS.

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MONDAY, JANUARY 10, 1921.

CONGRESS OF THE UNITED STATES,  
JOINT COMMITTEES ON AGRICULTURE,  
*Washington, D. C.*

The joint committee met, pursuant to call, at 8 o'clock p. m. in room 326, Senate Office Building, Senator Asle J. Gronna presiding.

Present: Senator Gronna (chairman) and Representatives Haugen and McLaughlin.

Senator GRONNA. A joint committee of the Committee on Agriculture and Forestry of the Senate and the Committee on Agriculture of the House have met this evening for the purpose of considering certain provisions of the so-called cold-storage bill, House bill No. 9521.

Congressman Porter requested that we hear certain gentlemen who are interested in the question of cold-storage eggs, or frozen eggs, and Congressman Haugen, chairman of the committee of the House, is really the man who has arranged, together with Mr. Porter, for this hearing.

Of course, we were very glad to give you people an opportunity to be heard. I take it that it is sections 2 and 6 of the bill that you would like to discuss, is it not?

Mr. PORTER. That is it; yes, sir.

Senator GRONNA. Before we proceed, I will say I understand there are representatives here from the Agricultural Department. Am I right about that?

Mr. PORTER. Yes.

Senator GRONNA. Congressman Porter, since you have arranged this, we will be glad to turn the direction over to you.

Mr. PORTER. That is very kind of you.

Senator GRONNA. And we will ask you to call on these gentlemen whom you want heard; unless the representatives of the department desire to make a brief statement first, before you proceed.

Mr. MORRILL. We are here merely to furnish any information that might be called for. Congressman Porter asked us to be present, and we have some information, if it is desired.

Senator GRONNA. Very well. Then, Mr. Porter, you may proceed and call upon some of these gentlemen.

Mr. PORTER. Section 2 of the bill H. R. 9521, subdivision (e), defines the term "article of food" as follows:

(e) The term "article of food" means fresh meat, including all fresh edible portions of food animals, fresh fish, fresh poultry, drawn or undrawn, fresh game, eggs in shell or frozen.

The item of frozen eggs is the one in which the parties here are very deeply interested.



Section 6 prohibits the sale of any article which has been in cold storage for over 12 months; and that date is fixed beginning at the time when the article is first frozen, whether it be in the United States or not, under the subdivision (c) of section 11, which reads as follows:

(c) That nothing in this act shall be construed to exempt from compliance with all of the provisions hereof products which have been in sold storage or in a refrigerated vehicle or in any vehicle in the course of transportation into the United States or in cold storage or in storage prior thereto; and any such period of cold storage or of ordinary storage or of refrigeration or of transportation in any refrigerated or other vessel shall be included in the period of storage set forth in the previous sections hereof; and any importer of such articles of food shall be required to certify to any such period of prior storage or refrigeration or shipment and to mark the articles of food or containers thereof accordingly as required by the previous sections hereof.

Now, these frozen eggs are frozen in China, the headquarters of the industry being the towns of Hang-chow, Yang-chow, and Nanking and clearly under this bill the time begins to run from the date when they are first frozen. This construction is confirmed by the latter part of section 6, which says, "after the expiration of 12 months following the date when such article of food was first placed in cold storage."

The facts in regard to frozen eggs are quite familiar, and I am going to take the liberty of calling four or five men who are interested in the business, because the men here to-night represent practically all of the baking interests of the country. These eggs are used solely by the bakers. There is no doubt about them being healthful. There are representatives here from the department who will testify to that, and I shall not take up any more of your time, but will call three or four witnesses and put on the record the exact facts in regard to frozen eggs. I would like you to hear first from Mr. Horsfield, president of the John Layton Co.

**STATEMENT OF MR. H. I. HORSFIELD, OF 90 WEST STREET, NEW YORK CITY, PRESIDENT OF THE JOHN LAYTON CO.**

Senator GRONNA. Will you kindly give the stenographer your name and your place of residence and your business?

Mr. HORSFIELD. Gentlemen, I am president of the John Layton Co., who are the largest importers of frozen eggs into America. We pack our eggs in China, in Hankow and Nanking which are away up the Yangtse River.

We commence to pack our eggs in the spring, in April and May, and in late March, and we get our season's quantity packed, and they remain there until August when we have sufficient water to bring our steamers up the river alongside of the cold storage, and take the eggs away from there and bring them by way of the Pacific and the Panama Canal direct to New York.

These eggs arrive here by that means somewhere about the middle of October, and if this bill goes through, as it appears to be in the bill now, it will mean that these eggs are 6 months old before they will get here, and by the end of March or April they will be 12 months old and will be outlawed, which would prevent us from selling any eggs after that time until the next October, and bakers would not be able to draw upon us at all.



Then it is impossible to hoard eggs of this nature for the reason that they are a purely seasonal product. They are packed in the spring, and the baker buys them in the spring, and after the spring has passed, after the 1st of June, you can not sell any frozen eggs for the reason that everybody has contracted for their supplies. In the autumn, if you have any eggs on hand that you want to sell, if you should try to hoard, you would not be able to dispose of them; you would have to keep them until the next spring; so you would have to keep them then 12 months and you would have paid charges of 6 cents a pound canning charges alone, to say nothing of your interest on your money and your insurance.

Then, it is impossible to pack two seasons' supplies at once, because when you come to the next season you practically have to shut down your plant for a year, so that hoarding of the frozen eggs is almost a commercial impossibility.

Senator GRONNA. Is your business that of buying eggs and selling them again, or do you use them in your business?

Mr. HORSFIELD. No; we buy the eggs in the shell and freeze them and sell them to the bakers.

Senator GRONNA. How long could these frozen eggs be kept before they would deteriorate?

Mr. HORSFIELD. The Department of Agriculture gives 24 months before there is any change in them whatever, I believe.

Mr. PORTER. I will say that we have here Prof. Barnard to testify on that question.

I wish you would describe a little more in detail, Mr. Horsfield, the process of packing and freezing these eggs.

Mr. HORSFIELD. They are all new-laid eggs, as near as we can get to them, and they are not supposed to be much over seven days old when we get them.

They are broken out with every possible precaution, in a sanitary plant. We have our own white supervision to attend to the breaking out. Then they are placed in cold storage at a very low temperature and frozen solid, and they are kept in cold storage until the refrigerator steamers come along, and then they are carried on the refrigerator steamer and carried across and sold direct to the bakers in this country in frozen form.

Mr. PORTER. Then they are frozen from the time they enter the refrigerating plant in China until they get to the baker in this country?

Mr. HORSFIELD. Until they get to the baker's shop.

Mr. McLAUGHLIN of Michigan. They are frozen while on the steamers?

Mr. HORSFIELD. Yes; we carry our steamers at between 12 and 16° F.

Mr. McLAUGHLIN of Michigan. And ordinarily it takes about six months, you say, from the time you pack them until you get them here in this country?

Mr. HORSFIELD. From the time they are packed until we get them here. I do not mean six months in travel.

Mr. McLAUGHLIN of Michigan. I know; but from the time you pack them?

Mr. HORSFIELD. They do not get here until October.



Mr. McLAUGHLIN of Michigan. Why is it necessary to buy these eggs away over in China?

Mr. HORSFIELD. We can get a better egg in China. In China we only pack an absolutely new-laid egg.

Mr. McLAUGHLIN of Michigan. Would it not be possible to do that in this country?

Mr. HORSFIELD. It would be possible, but I do not think it would be profitable, because you can get more money for an egg in the shell than you can——

Senator GRONNA. Then I understand the reason you are buying the eggs over there and freezing them and bringing them here is because you can buy them cheaper there, is it not?

Mr. HORSFIELD. We can buy cheaper and we can get a better product.

Senator GRONNA. How do the prices range and compare with prices in America when you buy these eggs—I mean in percentages?

Mr. HORSFIELD. I have not that information. I do not know what the difference is.

Mr. McLAUGHLIN of Michigan. Why are they a better product than you can get in this country?

Mr. HORSFIELD. I was speaking of a frozen egg. The frozen egg in this country is made largely from cracked eggs. I will not say the majority, but a large quantity of the frozen eggs here are made from leakers. These are new-lain eggs when we break them out.

Mr. McLAUGHLIN of Michigan. Originally, though, they are no better than the frozen eggs in this country?

Mr. HORSFIELD. Originally the eggs there are no better than the fresh eggs in this country.

Mr. McLAUGHLIN of Michigan. I did not get an understanding of just what you said.

Mr. HORSFIELD. Yes.

Mr. PORTER. The Chinese eggs, you could take them just as they come and break them, and there may be 2 per cent of them are leakers?

Mr. HORSFIELD. But we do not put them in our pack.

Mr. PORTER. You do not put them in?

Mr. HORSFIELD. No, sir.

Mr. PORTER. But in this country, as a conservation measure, the leakers are frozen?

Mr. HORSFIELD. And packed. That is my understanding. I do not pack eggs in this country.

Mr. PORTER. Another question. When do you make your contracts with bakers for the sale of these frozen eggs—in what period of the year?

Mr. HORSFIELD. From early in the spring; around March.

Mr. PORTER. Is that a contract for the year?

Mr. HORSFIELD. That means that we agree to supply the baker with eggs up to the next spring.

Mr. PORTER. The next spring?

Mr. HORSFIELD. Yes; at a given price.

Mr. PORTER. And at that time you would have enough frozen eggs on hand to complete that contract, in a large measure at least?

Mr. HORSFIELD. Yes; in large measure.



Senator SMITH of South Carolina. May I ask you what is the relative price that you pay there as compared with the price you pay here, from first hands?

Mr. HORSFIELD. I have no knowledge of that, because I do not attend to the buying end of it. My end is the selling end of it. I do have gentlemen here who can give you that information.

Mr. McLAUGHLIN of Michigan. There is some information coming to us to the effect that the eggs from China are not as good as the eggs produced in this country, due to the kind of feed that the chickens in China are fed on. Have you any information about that?

Mr. HORSFIELD. I have not. I have information that our goods are always passed by your Federal food authorities here before we are allowed to put them in consumption. Every ship that comes in is subject to that examination.

Senator SMITH of South Carolina. Under the pure-food law?

Mr. HORSFIELD. Yes, sir.

Mr. McLAUGHLIN of Michigan. When they reach this country and are subjected to inspection they are frozen?

Mr. HORSFIELD. They are frozen.

Mr. McLAUGHLIN of Michigan. What does the inspector do by way of inspecting them?

Mr. HORSFIELD. He comes down to the cold-storage warehouse, and he takes a bitt—an auger, as a rule—and cuts out a section of the can, and he drives right down into the core of that can with a sterilized instrument and takes a sample right from the core of the can and places it in a sterilized container and takes it home and puts it through whatever analysis he thinks best, either bacterial or chemical analysis.

Mr. McLAUGHLIN of Michigan. What is that?

Mr. HORSFIELD. He examines it either from a bacterial count or from a chemical analysis. That is what we understand he does.

Mr. McLAUGHLIN of Michigan. When they are in a frozen state and a sample is taken from them in that way, can it be determined what condition the eggs were in at the time they were first frozen?

Mr. HORSFIELD. I think so. After they are thawed out, which does not take long when he gets them away from the cold storage, they come back to the natural condition just the same as they were before they were frozen.

Mr. McLAUGHLIN of Michigan. Your shipments reach here about the 1st of October?

Mr. HORSFIELD. About; yes, sir.

Mr. McLAUGHLIN of Michigan. You make your contracts the next spring?

Mr. HORSFIELD. Yes.

Mr. McLAUGHLIN of Michigan. And you begin to fill those contracts by taking from your supply that came over in October?

Mr. HORSFIELD. Yes; or if we have some on hand, the October before. And then we do not get every pound of stuff in one shipment, but our big 80 per cent shipment comes in October.

Mr. McLAUGHLIN of Michigan. It begins to come then?

Mr. HORSFIELD. Yes; and then we might have small quantities sent by way of England.

Mr. McLAUGHLIN of Michigan. You say you have been filling your contracts partly with eggs that came the year before?



Mr. HORSFIELD. Some of them may have been.

Mr. McLAUGHLIN of Michigan. Is it your idea that this bill could be so framed as to permit that?

Mr. HORSFIELD. Well, there is a certain leeway that you have to give to the trade. They can not always tell when they will finish their contract. If we bring eggs here in October, we would expect to get rid of the entire shipment by early July.

Mr. McLAUGHLIN of Michigan. The eggs that begin to arrive in October of 1919 were gathered beginning perhaps the latter part of March, you say, 1919?

Mr. HORSFIELD. Yes.

Mr. McLAUGHLIN of Michigan. And immediately frozen?

Mr. HORSFIELD. Yes.

Mr. McLAUGHLIN of Michigan. Then, the latter part of March, 1920, they would have been in cold storage, frozen, one year.

Mr. HORSFIELD. One year.

Mr. McLAUGHLIN of Michigan. Your idea is that perhaps it would be proper in this bill to exclude the time that they were frozen before reaching this country?

Mr. HORSFIELD. Well, I think the idea was to take the frozen eggs out of the bill.

Mr. McLAUGHLIN of Michigan. Oh! You mean altogether?

Mr. HORSFIELD. Yes, altogether; as I understand.

Mr. McLAUGHLIN of Michigan. And then the eggs that you receive in this country, beginning the 1st of October, 1918, could be delivered to your trade in the spring of 1920 and in the summer of 1920?

Mr. HORSFIELD. It would be a very foolish proposition to bring eggs here to hold them for two years.

Mr. McLAUGHLIN of Michigan. That would be permitted; and you yourself said that you supplied your customers, a portion of them, with the eggs that you had carried over from the previous year.

Mr. HORSFIELD. I get eggs here this October. Well, they will last me until next July or August. By that time I am supposed to have them all out. But my new supplies will not come along until October again.

Mr. McLAUGHLIN of Michigan. Then there will be a couple of months, perhaps, when you will be out altogether?

Mr. HORSFIELD. Yes; or I will have to get some somewhere else. I might be able to get some shipments from England.

Mr. McLAUGHLIN of Michigan. Then China is not your only source of supply?

Mr. HORSFIELD. They will be Chinese eggs, from England.

Mr. McLAUGHLIN of Michigan. What is that?

Mr. HORSFIELD. They would be Chinese eggs coming by way of England.

Mr. McLAUGHLIN of Michigan. The eggs that were frozen in China and went to England, before reaching this country, would be frozen how long?

Mr. HORSFIELD. Well, they might not be frozen as long as those that came direct. It all depends on the steamer accommodations that have happened to be available. But we send our stuff right direct to the Pacific coast.

Mr. McLAUGHLIN of Michigan. From China?



Mr. HORSFIELD. From China.

Senator SMITH of South Carolina. Your idea is just to take the frozen eggs out of this bill and let it apply to the domestic eggs as well as to the imported eggs, on the ground that the chemical test under the pure-food law has shown that for 24 months an egg that has been continuously frozen, from its fresh state up to the time you are supposed to put it into consumption, is wholesome and is all right?

Mr. HORSFIELD. Yes.

Mr. McLAUGHLIN of Michigan. You get your entire supply from from China or England?

Mr. HORSFIELD. From China or England. From China, in the first place.

Mr. McLAUGHLIN of Michigan. You buy no eggs in this country to freeze them?

Mr. HORSFIELD. I have bought eggs in this country, years ago, when I have been short or caught; but that is not our business. For instance, you may happen to have some very serious delay. One of our steamers may break down and not get here, and rather than break faith with our trade I might go out and buy something to keep them going until our stuff got here. But that is not our business.

Mr. McLAUGHLIN of Michigan. When eggs come from China to the Pacific coast, do they come direct to your place in New York, and are they distributed from there, or do you sometimes distribute them along at one place and another from San Francisco to New York?

Mr. HORSFIELD. We do both. Sometimes we bring them right across the continent, and sometimes we keep them in San Francisco or Seattle, and sometimes we bring them halfway and leave them halfway.

Mr. McLAUGHLIN of Michigan. I did not know that it was suggested that the frozen eggs were to be left out of the bill entirely. The suggestion has been made to me that it would be proper from your standpoint if the time of one year that is provided in the bill should begin at the time the eggs were received in this country. What do you say to that?

Mr. HORSFIELD. Well, that would be very difficult. It would be much better for us and also for the trade in general if the frozen eggs were taken right out of the bill.

Mr. McLAUGHLIN of Michigan. In general, there are two purposes in the cold-storage law. One is that the product of one season can not be carried over to another season, and the other is that the products deteriorate in storage.

Mr. HORSFIELD. Yes.

Mr. McLAUGHLIN of Michigan. If your idea was followed, you would do away altogether with the idea of preventing the product of one season being carried over to another season, as to frozen eggs?

Mr. HORSFIELD. To a certain extent.

Mr. McLAUGHLIN of Michigan. That is all.

Mr. HAUGEN. The object of packing and freezing eggs in China is on account of the quality of the eggs?

Mr. HORSFIELD. The quality of the eggs. You get very much better eggs.

Mr. HAUGEN. There you buy the fresh eggs and pack them as fresh eggs?

Mr. HORSFIELD. Yes.



Mr. HAUGEN. Over here you would have to buy older eggs in a state of deterioration?

Mr. HORSFIELD. Yes.

Mr. HAUGEN. And the price has something to do with it?

Mr. HORSFIELD. Both ways. We can sell the Chinese egg to the baker here that is an absolutely new-laid egg, frozen.

Mr. HAUGEN. It is as good an egg as that in this country?

Mr. HORSFIELD. Yes.

Mr. HAUGEN. Is it so considered by the consumers or the bakers?

Mr. HORSFIELD. Yes; I think it is.

Senator GRONNA. Of course, you realize that this bill is in conference, it having passed both Houses. Now, I want to be very frank with you and say that the question of eliminating frozen eggs entirely from the bill is something that is hardly debatable; I mean if this bill is going to become a law. I say that in order that you may take that view of it.

Mr. PORTER. Yes. I thought that we would take this and see if we could work out a measure that would relieve these men. Dr. Barnard, will you make a statement to the committee?

**STATEMENT OF MR. H. E. BARNARD, DIRECTOR, AMERICAN INSTITUTE OF BAKING, MINNEAPOLIS, MINN.**

Senator GRONNA. Will you state your place of residence and your business, Mr. Barnard?

Mr. BARNARD. H. E. Barnard. I am director of the American Institute of Baking at Minneapolis.

For the past 15 years, up to this last fall, I was State food commissioner for Indiana, and chemist to the State board of health. I have been interested in cold-storage legislation since during the time the first cold-storage law was passed in this country. That bill was drafted in our office and was enacted in Indiana in 1909.

Senator GRONNA. Whom do you represent now?

Mr. BARNARD. I now represent the American Institute of Baking, which is a scientific institute founded and operated by the bakers of the country for the purpose of giving them answers to some of their scientific problems.

I appear to tell you something of my experience in handling these broken out frozen eggs, under the cold-storage law of the State in which I was working for 15 years. I have had occasion many times under that law to examine the cans of frozen eggs brought in there from China, and also those purchased in this country.

Mr. McLAUGHLIN of Michigan. What kind of cans are they in?

Mr. BARNARD. They come in a tin can which holds 40 or 50 pounds. It is a can very much like a lard can. Our inspectors have taken those samples of eggs at the cold-storage warehouse, brought them to the laboratory, and then analyzed them, and the method of analysis which has been followed is the method which has been worked out in our laboratories and in the laboratories of the Department of Agriculture here in Washington.

Mr. McLAUGHLIN of Michigan. How are they sold, by the pound?

Mr. BARNARD. They are sold by the pound.

Mr. McLAUGHLIN of Michigan. So they are sold by weight?



Mr. BARNARD. Sold by weight. Because of our interest in the quality of those eggs from the wholesomeness standpoint, we have been—

Senator GRONNA. Could you tell us approximately what the prices have been, say for the last year or the last three or four years?

Mr. BARNARD. No; I regret that I have no data on the prices. My interest has not been an economic one, but is simply concerned with the wholesomeness, because we wanted to know that our bakers were using only wholesome products.

Senator GRONNA. And that, of course, should enter into the question of prices.

Mr. PORTER. We have Mr. Ward here, of the Ward Baking Co., who will give you information as to prices.

Mr. BARNARD. May I say that in our experience we have never found frozen eggs which in any way were unsuitable for use? They were always a wholesome product. The bacterial count and the chemical analysis, as determined by methods which are entirely accurate and which are set out in this bulletin of the Department of Agriculture, have shown that the frozen eggs were a wholesome product.

Mr. McLAUGHLIN of Michigan. For how long?

Mr. BARNARD. In discussing the period in which the eggs would remain of good quality, scientists have finally reached a conclusion which they have set out here in a bulletin of the United States Department of Agriculture, to the effect that no change in composition occurs in frozen eggs up to 24 months. After 12 months the egg thickens slightly. I quote now from the bulletin of the department:

"Whites near the top of the can may become pink, due to the iron under the tin, but the egg is not injured as a food product thereby."

But I may say, gentlemen, that the findings of the Department of Agriculture have been confirmed over and over again by our own investigations in our laboratory of the State Board of Health of Indiana.

Mr. McLAUGHLIN of Michigan. A change can first be detected at what stage—a year?

Mr. BARNARD. No change of composition occurs up to 24 months they say. Then that is slightly qualified by saying that after 12 months the egg thickens slightly, but they say that the egg is not injured as a food product thereby.

Mr. PORTER. Then, in your opinion, these eggs are perfectly wholesome up to 24 months?

Mr. BARNARD. For 24 months; yes, sir.

Mr. PORTER. And in that you are fortified by the Department of Agriculture of the United States?

Mr. BARNARD. Yes, sir. There has been a great deal of work done on that subject by investigators of the State boards of health as well as by the Department of Agriculture.

Mr. PORTER. While you are here I wish you would tell the committee of the system of inspection by the United States Government when these eggs arrive in the United States.

Mr. BARNARD. As you know, gentlemen, under the Federal food law, laboratories are maintained at all the ports of entry of the country where all foodstuffs which are sampled by inspectors of the Department of Agriculture are brought for analysis before the goods



are allowed to pass through the customs. All of the eggs as well as all other foodstuffs which are brought into this country for consumption are subject to inspection by the Government officials at the New York laboratory, the Baltimore laboratory, the New Orleans laboratory, or wherever they come in. If the goods are found to be wholesome they are released and pass into the interstate commerce. As soon, then, as they reach the jurisdiction of the States, they then come under the control of the cold-storage laws and pure-food laws of the several States. Practically all of the larger States have both cold-storage laws and pure-food laws which are adequately enforced, so that these eggs not only have the examination which is made of them at the port of entry, but they are later subject to analysis, before consumption, in the several States, by the health authorities or by the pure-food authorities.

Mr. McLAUGHLIN of Michigan. What is the ordinary size of a shipment received from China of these eggs?

Mr. BARNARD. I have no information on that subject.

Mr. McLAUGHLIN of Michigan. They come in cans of a certain size, you say. You do not know how many cans there are, or anything about it?

Mr. BARNARD. No; I do not know; only I have seen them in the cold-storage warehouses, piled up in considerable quantities.

Mr. McLAUGHLIN of Michigan. When the officials of the Department of Agriculture at a port of entry make an inspection, such as you have spoken of, how many samples do they take?

Mr. BARNARD. They take enough to satisfy themselves that the eggs are all wholesome, and that they all conform to requirements.

Mr. McLAUGHLIN of Michigan. How many cans do they open?

Mr. BARNARD. That I can not say.

Mr. McLAUGHLIN of Michigan. More than one?

Mr. BARNARD. They take more than one.

Mr. McLAUGHLIN of Michigan. How many more?

Mr. BARNARD. I do not know. My instructions to my inspectors were that they should open 1 can in 20, if there was a large number of cans.

Mr. McLAUGHLIN of Michigan. Did you ever work at these ports of entry?

Mr. BARNARD. No; I am speaking of my own State work; but I know that the Federal work is done quite as well as we ever did it in the States, because of the fact that I think they probably have better inspectors.

Senator SMITH of South Carolina. You are not posted as to the method of procuring fresh eggs at the original port of shipment?

Mr. BARNARD. In China?

Senator SMITH of South Carolina. Yes.

Mr. BARNARD. No, sir.

Mr. PORTER. We will show that by another man.

Mr. BARNARD. I am familiar with the methods employed in this country in breaking out and freezing eggs, because they have several very excellent plants in my own State.

Senator SMITH of South Carolina. So that before they go into the freezing process you can ascertain which are fresh and which are not before you freeze them?



Mr. BARNARD. Yes, sir.\* Modern methods of preparing those eggs for freezing have been worked out until they are very satisfactory, indeed, from a sanitary standpoint.

Mr. McLAUGHLIN of Michigan. In how many States have you worked?

Mr. BARNARD. I was State chemist of New Hampshire for 5 years and State chemist of Indiana for 15 years.

Mr. McLAUGHLIN of Michigan. Have they cold storage laws in New Hampshire?

Mr. BARNARD. I do not know. I doubt it. They have in Indiana. They had the first cold storage law passed in this country.

Mr. McLAUGHLIN of Michigan. Did it contain a provision in regard to frozen eggs?

Mr. BARNARD. No; it applied to all foodstuffs other than fruits, and in that way frozen eggs were included in the provisions of the act.

Mr. McLAUGHLIN of Michigan. There was a limit of time that frozen eggs could be kept?

Mr. BARNARD. Yes.

Mr. McLAUGHLIN of Michigan. What was that limit?

Mr. BARNARD. It was nine months; but there was a proviso that at the end of nine months the eggs should be inspected, and if they were found to be wholesome they were then allowed another period. And that is the reason why I had occasion to examine so many samples of frozen eggs, because frequently the owners of the eggs at the end of the nine months' period called upon us to see whether the eggs were satisfactory.

Mr. McLAUGHLIN of Michigan. How long was that additional period?

Mr. BARNARD. Until they became unwholesome; and we never found any. They always passed into consumption before they ran over the age limit.

Mr. McLAUGHLIN of Michigan. Did you find that in the course of business in Indiana it was necessary to extend the time?

Mr. BARNARD. Yes.

Mr. McLAUGHLIN of Michigan. In the case of frozen eggs?

Mr. BARNARD. Yes, sir; that is one of the few items.

Mr. McLAUGHLIN of Michigan. And it would have been burdensome and expensive if you had not had that proviso?

Mr. BARNARD. It would have meant the condemnation and destruction of considerable quantities of a perfectly wholesome food. About the only other items which called for reinspection were butter and cheese.

Mr. McLAUGHLIN of Michigan. But, generally speaking, all goods or products do deteriorate with time; is not that true?

Mr. BARNARD. That is true; but, of course, the temperature factor must be taken into consideration. Eggs which are solidly frozen remain in an edible condition much longer than when the temperature is above freezing.

Mr. McLAUGHLIN of Michigan. Take those that are frozen. Does not a change take place after a time in all food products?

Mr. BARNARD. Yes; undoubtedly a change does take place, but we have never kept broken eggs out long enough to determine the time when they become unfit for food.



Mr. McLAUGHLIN of Michigan. And, as a general thing, it is almost impossible to tell when the change begins?

Mr. BARNARD. No; I think not. There are certain chemical and bacterial methods which determine when the foods reach a condition when they should not be used for food.

Mr. McLAUGHLIN of Michigan. My impression is that in nearly all foods there is some change that makes its appearance in time and that it is almost impossible to tell when the beginning of the deterioration takes place.

Mr. BARNARD. There is naturally a constant and steady change from the time an apple is picked or an egg is laid—the change is slight and is not injurious. In the case of the apple it is the conversion of elements into some other form, and in the case of the egg it is a slow breaking down due to oxidation for the most part of the fat in the egg. The same change takes place that takes place in the ripening of butter, and that is not held to be at all injurious; and, in fact, in the case of cheese, the riper it gets the better we like it.

Mr. McLAUGHLIN of Michigan. The change in texture is noticeable after a time, too, in a great many foods.

Mr. BARNARD. That is true.

Mr. McLAUGHLIN of Michigan. And there is a marked change as to palatability.

Mr. BARNARD. I would not say that that is true in the case of a frozen egg. It is true in the case of eggs in the shell after a period of seven or eight months.

Mr. McLAUGHLIN of Michigan. And it is true as to a number of other articles of food.

Mr. BARNARD. There is a change in the palatability of meats which have been long frozen; and fish becomes dry.

Mr. McLAUGHLIN of Michigan. It becomes unpalatable altogether.

Mr. BARNARD. They become dry and more or less tasteless, and, after a long period of time, they become what they call “tacky”—that is, not rancid but the oil in the fish changes somewhat.

Mr. McLAUGHLIN of Michigan. But even in that condition you would say that there is no change?

Mr. BARNARD. So far as wholesomeness is concerned, they are still wholesome.

Mr. McLAUGHLIN of Michigan. Does that apply to canned fish as well?

Mr. BARNARD. I would hardly know how to answer that, because canned food—canned fish for many years is still wholesome. I have eaten canned fish that was 10 or 12 years old. It was wholesome, but it was not as good as it was when it was fresh. It had lost its freshness during those 12 years.

Mr. McLAUGHLIN of Michigan. Have you ever made any investigation as to the keeping of chickens in China?

Mr. BARNARD. No; I know nothing about that. I have seen many Chinese eggs in the shell in this country, sold on our markets.

Mr. McLAUGHLIN of Michigan. Do you find any difference in your analysis of Chinese frozen eggs and your analysis of frozen eggs in this country that were laid in this country?

Mr. BARNARD. No; I think not; although the bacterial count is probably a little lower, on the whole, in the case of the Chinese eggs than it is in the case of eggs broken out in this country.



Mr. McLAUGHLIN of Michigan. Because of the better quality of the eggs in this country than of those in China?

Mr. BARNARD. You see, in this country they can not afford to break out and freeze the best eggs. They are wanted for table use. So that the eggs which are broken out and stored are the salvaged eggs, the dirties and the checks and cracks, and the eggs which will not stand shipment from Kansas or the Central States to the eastern markets, but which it is possible to salvage by breaking them out, and so save an excellent food material.

Mr. McLAUGHLIN of Michigan. Did you ever see them break them out in any large quantities?

Mr. BARNARD. Yes, sir.

Mr. McLAUGHLIN of Michigan. Did you ever see them throw out any?

Mr. BARNARD. Yes; they throw out every egg that is not absolutely all right, because one egg will spoil the whole batch.

Mr. McLAUGHLIN of Michigan. There are a good many stories to the effect that they do not throw out any when they put them in bulk and freeze them.

Mr. BARNARD. That may have been true if they told those stories seven or eight years ago. It could hardly be true to-day.

Mr. McLAUGHLIN of Michigan. What has made the change?

Mr. BARNARD. The passage of adequate legislation. In the first instance, by the Federal courts when the Federal food law was passed; and, in the second instance, by the passage of the sanitary food laws of nearly every State.

Mr. McLAUGHLIN of Michigan. In case of an analysis of frozen eggs where there were some that were bad and should not have gone in, do you say that the chemists could always detect the presence of those bad eggs?

Mr. BARNARD. I do not know whether you could detect the presence of one egg that had been broken up and mixed with a thousand others.

Mr. McLAUGHLIN of Michigan. What proportion of bad eggs would have to be present in order to spoil the others?

Mr. BARNARD. A very small quantity indeed.

Mr. McLAUGHLIN of Michigan. How small?

Mr. BARNARD. I would not want to say; but the bacterial count would run up. One of the egg tests easily understood is the ammonia content. Ammonia in a certain form is a component of all of our animal foods, and as food decomposes, in the case of eggs, the ammonia becomes strong.

Mr. McLAUGHLIN of Michigan. Would the absence of ammonia in frozen eggs indicate their good condition?

Mr. BARNARD. If the frozen eggs had not been made of good material, the ammonia content could easily be shown by chemical analysis, and that is one of the common tests and is set out very fully in this bulletin.

Mr. McLAUGHLIN of Michigan. Would that be apparent soon after the freezing?

Mr. BARNARD. At any time—before they were frozen, or two years afterwards.

Mr. PORTER. One of these cans would contain perhaps 600 eggs, would it not—50 pounds?



Mr. BARNARD. Yes; at least that, I should say.

Mr. PORTER. About 600?

Mr. BARNARD. Yes.

Mr. PORTER. And manufacturers would be very foolish to allow a half dozen bad eggs to be put into a can and spoil the whole can. A man could not do that and be a manufacturer very long. His business would not last. In other words, it is to his interest to keep those bad eggs out of the can?

Mr. BARNARD. Certainly.

**STATEMENT OF MR. HERBERT J. KEITH, PRESIDENT, H. J. KEITH CO., BOSTON, MASS.**

Mr. PORTER. Kindly state your name, residence, and occupation.

Mr. KEITH. H. J. Keith, president of the H. J. Keith Co., of Boston, a Massachusetts corporation, and president of the Amos Bird Co., a Connecticut corporation.

The Keith Co. is a sales organization, incorporated for 20 years, selling frozen eggs that are known as Keith's eggs.

These eggs include perhaps a third of the eggs that are frozen in the United States. They are frozen at different places in the Middle West.

They also include eggs frozen in China by the Amos Bird Co. at its plant in Shanghai and consigned for sale by the Amos Bird Co. to the Keith Co. in the States.

Mr. PORTER. Have you been in China recently?

Mr. KEITH. In 1919.

Mr. PORTER. How long were you there?

Mr. KEITH. About four weeks.

Mr. PORTER. Will you describe to the committee the process of refrigeration of eggs?

Mr. KEITH. It is the same that we use in the States. We have a cold storage with refrigerating machinery and storage rooms maintained at low temperatures, with storage for the shell eggs to cool them before they are broken—to precool them.

Mr. PORTER. How are they packed for shipment?

Mr. KEITH. In cans. I have here the cover of a can. The same methods are used that we use in the States, and those methods have been worked out in conjunction with the United States Department of Agriculture.

The eggs are broken by girls. They have cups on a tray, and have a knife, and they break the egg on that knife and then they drop the egg into the cup. They drop only two eggs into the cup and look at the eggs, and smell of them to see if there is any musty flavor, because you have to be very careful that there is not any flavor of must in the eggs. So they are always looked at and smelled, and then if they pass both inspections, they are put into the can from the dipper, two eggs at a time into the can, and they pass several inspections on the way to the freezer. They are inspected in the cans in which they are taken from the dipper, and then they are churned and inspected in the churn; so that they pass the inspection of several people before they finally are frozen.

We consider that necessary, because it would be rather fatal if we got any musty eggs into the mixture. You can tell a bad egg



without any trouble, but a musty egg sometimes has only a very faint odor, and you have to be very expert to always keep it out.

Senator GRONNA. At whose expense are the inspections made? Does your company make these inspections?

Mr. KEITH. Yes; our employees, but there is another inspection at the factory.

I have here the cover of one of the cans of eggs frozen by us in China, and on this and every can that we import there is this certificate:

I certify that I have regularly made a sanitary survey of this plant, and have medically examined your employees. Both the quality of the eggs and the conditions under which this product is packed are eminently satisfactory.

S. H. RANSOM, M. D.

Dr. Ransom is, as it happens, the United States port physician of Shanghai.

Senator GRONNA. That is really an American inspection?

Mr. KEITH. An American inspection; not official, because he can not give an official inspection, but as it happens he is United States port physician of the international settlement in Shanghai.

Senator GRONNA. Are any inspections made by the Government of China?

Mr. KEITH. No.

Mr. McLAUGHLIN of Michigan. How do you get your eggs in China?

Mr. KEITH. Very much as we do in this country, by rail and boat. Shanghai is on the Hoangpoo River, emptying into the Yang-tse close by. Some of the eggs come by boat from the producing sections and some come by rail.

Mr. McLAUGHLIN of Michigan. In what quantities do they come?

Mr. KEITH. They come every day.

Mr. McLAUGHLIN of Michigan. Large quantities every day?

Mr. KEITH. They come in baskets that look like bushel baskets in bulk, and with rice straw in the bottom. A basket is supposed to hold about 800 eggs, and in the spring of the year we break out about 1,000 baskets a day. They come in from day to day, and we cool them down and then break them out.

Mr. McLAUGHLIN of Michigan. From how large a territory in China do you get your eggs?

Mr. KEITH. From several hundred miles, perhaps up to 300 miles.

Mr. McLAUGHLIN of Michigan. Have you any personal knowledge as to how the chickens are kept?

Mr. KEITH. Yes.

Mr. McLAUGHLIN of Michigan. What is your experience in that regard?

Mr. KEITH. China is a land of custom. The Chinese live in villages with walls around them—some kind of a wall or compound. They have fields of crops around the villages. One of the unwritten laws of China is that each family shall keep only that number of hens that it can feed from its table scraps, so that those hens do not wander off into the neighbors' crops. I do not know how religiously they live up to that, but that is the standard, and the Chinese hen lives on the same food that the Chinaman does. It lives on table scraps.



MR. PORTER. That is mainly rice, is it not?

MR. KEITH. That is mainly rice; and I will say that I have eaten the eggs over there, and I like them quite as well as any eggs I have ever eaten anywhere. I think just as well of them.

Another thing I may say: I may be going a little aside from my topic, but it is a physiological fact that the egg is produced from the blood of the hen. The blood is pure, so that if the egg tastes good, it is all right. The hen, out of pure blood, secretes the egg, and puts the shell on it before she lays it.

MR. McLAUGHLIN of Michigan. Have you made any investigation to learn how long the eggs are kept at the place where they are laid before they are started on their journey to your plant?

MR. KEITH. In respect to that the conditions are as they are in the States. We do not have a known history of the eggs, but we do candle them. We do just the same over there that we do here. When we get eggs in Nebraska, Kansas, Illinois, or any place where they raise hens and sell eggs in this country, we can only judge of them by candling them; and then, having passed the candling test they must pass the test in breaking them, both their appearance and the way they smell. And sometimes we take something like a milk taster and taste of them; but there is no way of knowing the history of an egg either in this country or in China. The farmer may hold them. We can not tell, except to tell whether they are good when we get them.

Senator SMITH of South Carolina. The only thing that concerns you is the condition in which they are when you get them?

MR. KEITH. That is it, and we determine that in the same way that we do in this country, and the general quality of the egg is the same that it is here. The fresh egg is just as good as it is here, according to my own observation in eating them, and in breaking them out. I have been in the business 28 years. I am one of the pioneers in the business of freezing eggs.

Senator SMITH of South Carolina. You are in a position to tell us what is the difference in the price, the general average price there and here.

MR. KEITH. The Chinaman is paid in silver, and a little over a year ago, if you paid him the same amount of silver that you paid him five years before that, you paid him three times as much in gold. Now, silver has gone down quite a bit, and the cost in China depends a whole lot upon the fluctuations of the silver market. But our cost is very largely the cost of manufacturing and shipping and paying the duty. According to the length of time we carry the eggs we have to add from 15 to 17 cents a pound to the cost of the raw material to get the eggs delivered in the States. That depends, of course, on whether we sell on the Pacific coast or on the eastern seaboard. I am figuring the eastern seaboard cost now, on the transportation. Our prices vary. A pound of eggs consists of about 11 American eggs, or about 12 Chinese eggs, because the Chinese eggs average smaller than ours. Our cost in China has run from about 6 cents a pound up to about 25 cents. We have had that variation in the cost of the raw material, which would mean that at the high point our eggs have cost us 40 cents a pound. That is the highest cost we have ever had against Chinese eggs per pound frozen in Shanghai and brought over to the Atlantic seaboard—about 40 cents.

Senator SMITH of South Carolina. Delivered here?



Mr. KEITH. Delivered here; but we have delivered them at less than that. I guess about 20 cents a pound is the least they have cost us delivered. Those that we have on hand in the States now have cost us about 35 cents. That is about the average cost at the present time.

Senator GRONNA. On an average, how many eggs does it take to make a pound?

Mr. KEITH. A dozen Chinese eggs or 11 American eggs. The Chinese eggs are smaller than the eggs run in the Middle West.

There is one statement I should like to make——

Senator GRONNA. Before you go on to that, I will ask you this question: We are on a gold basis in this country. Now, basing your figures upon gold, how do the prices in China compare with the prices in the United States?

Mr. KEITH. The prices I have given you, sir, are the prices reduced to gold. The figures I have given you are in gold, but the price of silver has hopped around to beat the band. I have given you gold prices.

Mr. McLAUGHLIN. How soon after the eggs reach your establishments are they frozen?

Mr. KEITH. As soon as they are precooled. We might have a few days' supply on hand. Sometimes they come in faster than they do at other times and we can not always keep up with them as we could if they came regularly. Sometimes they come faster and sometimes slower. We might have a few rays' run of eggs on hand in the baskets waiting to be broken, but we intend to break them out within a week after we get them to the plant. We do not want to break them out until we have got them precooled.

Mr. PORTER. Do you keep them in the refrigerator during that time?

Mr. KEITH. Yes; we want to cool them down before we break them.

Mr. McLAUGHLIN of Michigan. After they are broken, how soon are they frozen?

Mr. KEITH. They go to the freezer immediately, within an hour after they are broken, and more often within half an hour.

Mr. McLAUGHLIN of Michigan. How long are they frozen in China before being shipped to the United States?

Mr. KEITH. When we begin to freeze in the spring we begin to ship, as soon as we have enough, if we can get vessels. We ship by the Jap Line boats, O. S. K., and we begin to ship as soon as we have eggs enough in the spring. We have to contract for our shipments usually so as to make them the year around, so as to secure the vessels, and then we ship from time to time, and some of those eggs may have been in China six or eight months before we get them shipped out. Then they would be a month coming to Seattle. Then we put them in the cooler there, and get them down to zero. Then we ship them maybe to Chicago and put them in the cooler and get them down to zero. Then we ship them on to New York. If it was cold weather we would ship them right straight through from Seattle to New York. They might be about three weeks getting there, but on the whole it would be about two months from the time we ship them in Shanghai until we get them delivered in New York.

Mr. McLAUGHLIN of Michigan. Is there any time during the shipment when they are not frozen hard?

Mr. KEITH. No. We depend on the insulation and the icing of the car partly, but aside from that we line the car with the insulated paper, and wrap the body of eggs right up in that insulated paper, and lap it over. Then we have the eggs at zero when we load them in the car, and we depend on the eggs keeping themselves cold while they are on the road, the same as ice keeps itself cold in an icehouse. The temperature comes up while they are running from Seattle to Chicago, but we land them in Chicago solidly frozen still.

Senator GRONNA. Have you more than one packing plant in China?

Mr. KEITH. Only one.

Senator GRONNA. How do you get the eggs? Do you send your own agents out to buy them, or are they shipped direct to your plant?

Mr. KEITH. Sometimes we buy them from a Chinese hong, as it is called. That is sometimes called a guild, I think, a combination of Chinese egg dealers in the country. They agree to deliver us so many baskets a day over a given period. Sometimes we maintain branches and send out our own men and station them at places in the country, and we send up the orders to them, and they buy them and ship them in. We do both ways, because we want to keep check on the comparative results.

Senator GRONNA. You have had many years' experience. In your experience do you occasionally find a bad egg?

Mr. KEITH. Do you mean in the shell eggs?

Senator GRONNA. Yes.

Mr. KEITH. In the hot spell last August when we were still freezing eggs we threw away 70 out of every 100 that we paid for.

Senator GRONNA. That was in China?

Mr. KEITH. That was in China.

Mr. PORTER. When was that?

Mr. KEITH. Last August. They had a blazing hot summer, and those eggs were struck by the heat, and we threw away 70 per cent of them that we had paid for.

Senator GRONNA. So you do have losses in China as well as you would have if you were to pack them in this country.

Mr. KEITH. Yes; and you have got to maintain your standard there the same way as you do here.

There has been something said about leaky eggs. I will speak of that. The Department of Agriculture approves of the salvaging and freezing of eggs that are leaking from the shell in the United States. We favor that in the States, but the Keith Co. does not put them in the same grade. We separate them and sell them for less money in the States. We maintain the same standards with respect to eggs frozen in the States that we do in China. We do not put any leakers into either of them.

Senator GRONNA. You pack and freeze eggs both in China and the United States?

Mr. KEITH. Yes.

Senator GRONNA. In your long experience freezing eggs how are the conditions in this country compared with conditions in China? In what condition do you find the eggs?

Mr. KEITH. We lose more eggs in China. We throw away more eggs in China in the course of a season than we do here—more than



we used to here. Our best packing point in the United States, in my judgment, is Topeka, Kans., and we have had almost no rotten eggs there the last year. A dozen years ago in hot weather we would have thrown away most of them in Topeka, but the work that has been done in the United States within the past dozen years has brought up the quality of the eggs. The eggs are brought down to the place where they are taken care of here in the States, particularly, I think I will say, in Kansas—Kansas shines in that respect at this present moment—they are got to the place where they come for refrigeration in a way that is amazing, compared to the way they were a few years ago.

Senator GRONNA. How far south do you go in buying your eggs in this country? Do you go into the warmer climate?

Mr. KEITH. About to the southern border of Kansas.

Senator GRONNA. You try, of course, to purchase your eggs as much as you possibly can in the Northern States, owing to climatic conditions, do you not?

Mr. KEITH. I like them better in Kansas. I began breaking them in Minnesota. I may be hitting the northwestern men, but I began breaking eggs in St. Paul and Minneapolis, and I found more musty eggs and more eggs that were off flavor in one way and another than in Kansas. Of course, they have lots of wheat and corn in Kansas, but I do not know just why it is that we have less trouble with musty eggs in Kansas than we do in Minnesota. I like the Iowa eggs, and I can get good eggs from different places, but you have got to watch them. Anybody that is breaking eggs gets expert, the same as anybody testing anything else. They get critical along that line. The longer they work at it the more fussy they get, and the more they will throw away.

Senator GRONNA. Is it not possible that that may be due to the regulations in the different States?

Mr. KEITH. It may be.

Senator GRONNA. Kansas, as I understand, has rigid inspection and regulation. Whether Minnesota has that or not I do not know.

Mr. KEITH. You asked the question and I have answered it honestly.

Senator GRONNA. I might just as well be frank with you. I made the inquiry for the purpose of finding out from you as an experienced business man why is it not possible to use American eggs altogether.

Mr. KEITH. I will tell you why I went abroad.

Senator GRONNA. That is what I want to know.

Mr. KEITH. For two reasons. I started this egg-freezing business 22 years ago to take care of the checked eggs, the eggs that have the shell broken but not broken through the membrane so they will leak, eggs that are just nicked. There were too many of them, and people would not buy them as shell eggs, and ship them around, because they get moldy and leaked out, and that made an awful mess, and sometimes people would not pay the freight when they were shipped from Iowa to New York. So I started freezing them to save these checked eggs. You get them for less money than you would if they are not checked, but they are just as good if you get them fresh enough.

It began in that way. Then the business grew. Hardly any frozen eggs were sold when I began, but the business grew, and it outgrew

the supply of what we call breaking stocks in this country, which consist of checked eggs and undersized eggs and odd sizes, eggs with the shells soiled and one thing and another, what we call breaking stock; so we got to the point where we were breaking the current receipts, the eggs just as they came from the farms. Sometimes we were compelled to send whole carloads to the refrigerator and break them out to keep up our trade supply. Now, inasmuch as we were raising the price of the breaking stock all the time, because there were not enough to go around, other people were getting into competition, and we could not sell our frozen eggs at a price that would be very interesting to the bakers if we did not watch out.

MR. PORTER. The bakers alone use these frozen eggs, as I understand?

MR. KEITH. Practically they are the only users. The ice cream people use some, and there are a few other users, perhaps, but it is altogether a factory consumption.

MR. McLAUGHLIN of Michigan. The hotels use them some, do they not?

MR. KEITH. Yes; but it is for commercial baking. It is in their own baking department. Wherever they do commercial baking they can use them.

MR. McLAUGHLIN of Michigan. Do not the hotels use that same kind of eggs for omelette?

MR. KEITH. A few of them do. They are coming to it this year more than ever before because shell eggs have been so high, and they use the dried eggs also for omelettes, but comparatively few use them. However, it can be done.

MR. McLAUGHLIN of Michigan. I presume you remember when grasshoppers were so numerous in Kansas and the chickens ate them, and the eggs were not fit to eat?

MR. KEITH. I got out to Minnesota the year after the grasshoppers ate them out of house and home. The grasshopper plague was over when I got into Minnesota. I got there the year after the grasshoppers.

MR. McLAUGHLIN of Michigan. What was the effect on the eggs?

MR. KEITH. I was not in the egg business at that time.

MR. McLAUGHLIN of Michigan. Do you know what the effect was?

MR. KEITH. No; I do not.

MR. McLAUGHLIN of Michigan. You have heard that the eggs were not good, haven't you?

MR. KEITH. I did not happen ever to hear of that. I think a few grasshoppers might be all right, but an exclusive diet might not be.

MR. McLAUGHLIN of Michigan. Then, what the chickens eat does affect the quality of the eggs?

MR. KEITH. I think it affects the flavor somewhat. I know it affects the color of the yolk.

MR. McLAUGHLIN of Michigan. Is there any truth in the story that we hear about Chinese eggs, that the chickens over there are scavengers?

MR. KEITH. Just the same as they are here. The hen will pick up anything she can get anywhere, I don't care where she lives.

MR. McLAUGHLIN of Michigan. It is said more as to the hens in China than in this country, is it not, that they are scavengers?



Mr. KEITH. I have heard more talk about it, but I lived on a farm when I was a boy, and I do not see any difference. I know something about the habits of our hens that we had on the farm when I was a boy.

Mr. SMITH of South Carolina. They are not very choice in their diet?

Mr. KEITH. No; but they produce a good egg, from pure blood, in China and in the States.

Mr. McLAUGHLIN of Michigan. I have thought that where there was so much smoke there must be a little fire, and I have understood it is generally said that the chickens in China are scavengers and that on account of the impure food the eggs were not of very good quality.

Mr. KEITH. They are good eggs, I will guarantee, because I have eaten them, and it is the judgment of every man that ever went over there that they are good eggs. We maintain a white staff in Shanghai, quite a number of men from the States, and they agree that the eggs are tiptop. And with respect to the food, as I say, the Chinese hen lives on table scraps, and then if she can pick up a bug or something like that, she is just like the hen in the States.

Mr. McLAUGHLIN of Michigan. I suppose there is a laying season in China the same as there is in this country?

Mr. KEITH. Yes.

Mr. McLAUGHLIN of Michigan. What is the laying season in China?

Mr. KEITH. About the same as it would be in our Southwestern States.

Mr. McLAUGHLIN of Michigan. The hens begin to lay about the 1st of April?

Mr. KEITH. In March. You do not get any eggs in China until after the Chinese New Year. The Chinese New Year is a movable feast, like Easter. They celebrate the New Year, and it starts the 8th of February this year. After they have celebrated their New Year then they sober up, about a week after that, and then they begin to think about getting some eggs to market.

Mr. McLAUGHLIN of Michigan. Then the laying season continues about how long?

Mr. KEITH. The hens lay there the same as they do here. You will get some eggs in the fall and some eggs most any time, but the heavy lay is along during the spring months, the same as it is here.

Mr. McLAUGHLIN of Michigan. The heavy laying season stops about what time in China?

Mr. KEITH. They begin to lay late in February or the 1st of March. Last year New Years came late, and it was along in March before we got many eggs. They did not get down to the bottom until around the 1st of April.

Mr. McLAUGHLIN of Michigan. Then the laying stops about what time?

Mr. KEITH. The heavy lay is over some time in June. March, April, and May are the big months.

Mr. McLAUGHLIN of Michigan. Then your large purchases would be during those months?

Mr. KEITH. Yes.

Mr. McLAUGHLIN of Michigan. And then about what time do you ordinarily get them to this country?

Mr. KEITH. We ship them along from time to time.

Mr. McLAUGHLIN of Michigan. You said that they might be frozen there six or eight months?

Mr. KEITH. They might be. So far we have been rather short of storage space. We are putting in more storage space, but we have been obliged to ship them out a little faster than we wanted to. The natural way would be to keep them coming right through the year, because our customers use them the year through. We would ship from month to month, and the last shipment of eggs we would make in 1920 would get here along about February of this year. That is, we would keep them rolling, so that we would always have eggs coming for our trade in the States all the time as they used them. That is the way we would naturally do.

Mr. McLAUGHLIN of Michigan. But it might be that before the eggs would reach you in the United States, in Boston, a year would have elapsed after they were purchased by you?

Mr. KEITH. Pretty close to that; and there is another thing that I would like to state. That is particularly true of the separated whites and yolks. About 50 per cent of the business of the Keith Co. is not in the mixed eggs, but in the yolks and whites separated. We want to get the whites of the eggs at the time they are most firm, when they will be the best, and that is undoubtedly in April and May, and in April rather than May. So we would like to freeze as many of those separated eggs as we can early in the spring, and they are bound to lap over no matter when we freeze them, in the States or anywhere else. You can not get them cleaned up within the 12 months' limit.

Mr. McLAUGHLIN of Michigan. Do you carry many over from one year to another?

Mr. KEITH. Beyond the 12 months' limit we do, but not 24 months. I do not think we have ever carried any after 24 months except one time we got into a scrap with Dr. Wiley; we had some tied up here, about 10 or 11 years ago, for about 3 years, and we tested them after we had licked him. We went to the United States Supreme Court and licked him out. That was on our second grade, and there was no change in the flavor of those eggs, or in the bacteriological test, or in the chemical analysis, or by the test of the senses by smelling. We had them tested by the State of Kansas where they were packed. We had them tested by the Massachusetts Institute of Technology. We had them tested by the State of New Jersey, and we had the records of the tests that were made two years and a half before, when they were frozen, and there was no change.

Mr. PORTER. How does the price of frozen eggs compare with the price of shell eggs, taken as a general average?

Mr. KEITH. In the spring of the year the frozen eggs are slightly higher than the shell eggs, because we have the expense of packing against them, but then the price does not change throughout the year, and the rest of the year they are cheaper than the shell egg. They are cheaper than the shell egg at the present time. At the present time the frozen egg sells at an average of perhaps equivalent to 40 cents a dozen; that is, with us.

Mr. PORTER. What are shell eggs worth at the present time?



Mr. KEITH. Refrigerators are quoted at 61 cents, and then you have got to candle them. I guess they will be 70 or 75 cents by the time you get them retailed.

Mr. PORTER. What effect would the exclusion of the Chinese frozen eggs have upon the market price of the shell eggs to the consumer in the United States?

Mr. KEITH. It would bring it up.

Mr. PORTER. Why?

Mr. KEITH. Because the trade that is now supplied partially from China would have to be supplied altogether from the production of the States, and in order to supply the frozen eggs you would either not be able to supply them at all or else you would have to break not only the class of eggs that are now broken in this country for freezing, but you would also have to dip into the straight run of eggs as they come from the farmers, and even into the refrigerator firsts, and then I want to say that it would be wholly impossible for us to turn our business around, on our domestic packing, within the 12 months' limit, except by doing this. We should have to in the 12 months store some eggs in the shell, and break them out in the fall, or else we should have to go out and buy eggs in storage in the fall and then freeze them. They would not be so good, and they would cost more.

Mr. PORTER. When do you make your contracts with the bakers?

Mr. KEITH. When we are packing. The Keith Co. is much slower in contracting than most people are, and we string our contracts out from about the 1st of May, usually, until some time in June, but we are later than anybody else in contracting.

Mr. PORTER. That contract is for the period of one year?

Mr. KEITH. Yes. It terminates next spring. But the baker does not always get them used up.

Mr. PORTER. What effect will this 12 months' limitation have upon the shipment of frozen eggs from China, assuming that you fix the date as the date when the egg is first frozen in your factory at Shanghai?

Mr. KEITH. I will tell you what we do. I am going to be candid with you. We could not do business as we do it now. We could not freeze our eggs at the time when we ought to freeze them, when they are the best and the cheapest, but we would freeze some at that time and then we would freeze some more later, and they would cost more money and would not be so good; but we should struggle along and do our best to keep within the 12 months' limit, and we would have hard sledding and we would slip up, because the bakers do not know just how many eggs they are going to use. And, take note, they are not going to use up what they have bought for this year for another six months after their contracts expire, most of them, because the trade has slumped.

Senator SMITH of South Carolina. In case you were not very conscientious about giving the exact date when you broke them out and froze them, would there be any way to detect whether or not they had been frozen longer than that, when they arrived in this country?

Mr. KEITH. Not by examining them.

Senator SMITH of South Carolina. That is the point I make.

Mr. KEITH. No; not by examining them.

There is another reason why we can not keep within the 12-months limit on our domestic pack. We sold our whites and our yolks evenly. We sold the whites that were with the yolks that were separated, but the trade is using up the yolks first and is not using up the whites. The white part is selected out, and I think we are not going to be able to get out the whites that we packed for this year's trade much before pretty late in the fall. It is 1921 now and they were packed in 1920 with the anticipation that the whites would be gone next spring, and they will not be gone until next fall, and we could not do anything about it if we gave them away.

Mr. PORTER. That is the point I want to bring out. The demand is limited?

Mr. KEITH. Yes.

Mr. PORTER. I wish you would explain that to this committee.

Mr. KEITH. Just a certain class of trade use these eggs. It is not like shell eggs. Suppose we have shell eggs in storage and they are not going out fast enough. We can put the price down so they will be more attractive as an article of food, so the housewife will buy them in the place of meat or fish or something, and they will be eaten up. But a frozen egg is not a food in itself. It is a manufacturer's raw material. It is an ingredient of food, and it has to be used in a factory. Even if it is used in a hotel, it is used in a commercial way, in the hotel bakery; but the hotel use is almost negligible.

We depend on the bakers almost exclusively for the use of the frozen eggs. The baker is finding at the present moment that he can not sell so many cakes as he did six or eight months ago. People get out of employment, they get economical, and they conclude they will not eat quite so much cake, and the baker can not get them to, and there is nobody except the baker to consume the frozen eggs. Now, when it comes along in the spring of the year, some of our bakers will have used up their eggs and others will not have used half of them. We have bakers that use our eggs exclusively that can not use up what they bought from us during 1920 before 1923. Now, what are they going to do? We sell what they have got left to other people and keep them going, sell them to everybody that can use them at all, and get those old eggs used up and get everybody on the new eggs, and we will fix the price so as to make it equitable.

Mr. PORTER. Is it possible to hoard these frozen eggs to forestall the market?

Mr. KEITH. No; we can not forestall the market, because there is no market except in the contract season. We have the disposition to sell a lot of eggs that our customers have bought, that they can not use, in the desire to help them out, and we can not do it.

Mr. PORTER. What percentage of your frozen eggs are sold during the freezing season, from May to June?

Mr. KEITH. Practically all within 10 per cent.

Mr. PORTER. And the only other customers you have are those who have not ordered enough?

Mr. KEITH. That is it. There is readjustment. A man might find his trade better than he thought it would be.

Mr. PORTER. Outside of that you have no market for frozen eggs?

Mr. KEITH. That is it. We can not force the market, and if we gave them away the baker would not use them.



Mr. PORTER. From the business standpoint would there ever be anything to gain by holding these eggs a year, or an additional year?

Mr. KEITH. Not a thing.

Mr. PORTER. What effect would that have on your factory?

Mr. KEITH. If we held them over we would have to restrict our pack, according to the quantity we held over. We would pack less the next year.

Mr. PORTER. What does storage cost you a pound? Assuming that you held these eggs for a couple of years, what would your storage be?

Mr. KEITH. I figure that we can hold them for a cent a pound a month, including insurance and interest. We figure that they cost us six cents a year, if we hold them in storage, where the insurance rate is low.

Mr. PORTER. If you held them for two years you would have a storage and insurance expense of 12 cents a pound?

Mr. KEITH. Yes.

Mr. PORTER. That would hardly pay.

Mr. KEITH. There would be no earthly object in doing it. The only way you can make any money in that business is to clean it up every year.

Senator SMITH, of South Carolina. I should like to ask you if you were restricted to the freezing of the domestic product, you could not sell as cheaply as you do?

Mr. KEITH. No.

Senator SMITH, of South Carolina. The primary purchase is so much cheaper abroad that it pays you to establish a plant there, to purchase the eggs and ship them to this country and resell them really lower than you could purchase the primary stock here and freeze them?

Mr. KEITH. Yes; except that if we do not break out anything except the checked eggs, why, we can give a competitive price against the Chinese; but if we go beyond that, if we try to supply our trade from the domestic stock, we get the price up to where it would not be comfortable.

Mr. SMITH, of South Carolina. So that in China you get prime stock, if I may use that term, for freezing purposes.

Mr. KEITH. Yes.

Senator SMITH, of South Carolina. In this country you could not furnish the trade at the price you do and purchase prime stock here.

Mr. KEITH. I want to modify that statement a little. Some of these checked eggs, when they are just freshly checked, are just as good as any to eat, but we can not break out the same kind of eggs here. We can not break out all of them. We do not intend that there shall be any difference in quality between our No. 1 grade that we pack in the States, and our Chinese grade. We intend to maintain the two, so that neither we nor anybody else will know any difference, and by doing that we make a second grade in the States, and we do not make any second grade in China.

Senator SMITH, of South Carolina. That was not what I was attempting to get at. The point I was attempting to get at was that in China you have the pick of the eggs.

Mr. KEITH. Yes.

Senator SMITH, of South Carolina. You do not take the cracked eggs—those that will not stand shipment?

Mr. KEITH. No.

Senator SMITH of South Carolina. You take the prime eggs?

Mr. KEITH. That is it.

Senator SMITH of South Carolina. And in this country the prime eggs that will do for shipment, that you want for table use, would come at a price that would make it impossible for you to freeze them and put them on the market for anything like the price you do now.

Mr. KEITH. That is it. More than that, prime eggs in the United States mean those of standard size, with a clean shell and all that sort of thing.

Mr. HAUGEN. I understood the previous witness to say that the Chinese egg was superior to ours. I understand you to say there is no difference.

Mr. KEITH. That is a matter of personal judgment. I have been there, and I was there during our heavy packing season from March until July, and I did not make any distinction of that kind. I did make the distinction that the Senator just asked me, but I did not make the other distinction. We get just as fresh eggs here in the States as we can in China.

Mr. HAUGEN. What did you say the first cost was in China?

Mr. KEITH. We figure by the pound in our business. The pound is our unit of raw material that is broken out from the shell, and the cost per pound has varied in our experience of five years all the way from about 6 cents a pound at the low point to about 25 cents a pound at the high point. The average during the year 1920 was between 17 and 18 cents; that is, during our last packing season.

Mr. HAUGEN. What is the tariff on eggs now?

Mr. KEITH. It varies. On the separated whites it is a cent a pound. On the mixed eggs; that is, the whole of the egg mixed together into a batter, it is 2 cents a pound, including the weight of the interior container, making perhaps 2½ cents a pound. On the yolk it is 10 per cent ad valorem on Shanghai value, which works out this year higher than it has some other years. This year it works out around 2½ cents a pound on the yolks. Some years it has been cheaper than on the mixed eggs. The tariff is wholly inconsistent. I will not take the time of the committee, but I have my opinion about it.

Mr. HAUGEN. Is that price in gold or silver?

Mr. KEITH. In gold.

Senator SMITH of South Carolina. Just one thing. Several questions have been asked here about the quality of the Chinese egg as compared with the American egg. So far as the taste is concerned, for the purpose for which you use the broken egg that goes into the manufacturing process, it would not make any difference at all would it, as to the flavor, if the constituent elements of the egg were the same, there might be a difference without their being any real appreciable difference in chemical analysis.

Mr. KEITH. That might be; but just the same the taste of your cake, I think, depends upon the taste of the things you put into your cake, and if you put mean-tasting stuff into your cake I don't believe the cake would taste just right.

Senator SMITH of South Carolina. The point I was getting at was that there might be some slight difference in the flavor, but it would



have nothing to do with the value of your eggs for the purpose for which you use them, even if there was a difference in the flavor.

Mr. KEITH. I do not know whether I have met your question, but as I conceive it, I believe that the taste of the eggs enters into the taste of the cake, so that if the egg tastes good it helps the cake to taste good, because there are quite a lot of eggs in the cake.

Senator SMITH of South Carolina. And your experience in China was that they tasted as good as they do here?

Mr. KEITH. Just as good.

Senator SMITH of South Carolina. That they taste just the same?

Mr. KEITH. Just as good. I ate them just as freely and liked them just as well.

#### STATEMENT OF MR. GEORGE S. WARD, PRESIDENT, WARD BAKING CO., NEW YORK CITY.

Mr. WARD. Mr. Chairman, I am president of the Ward Baking Co., of New York City. I am also here as chairman of the trade relations committee of the American Association of the Baking Industry and represent the Retail Bakers' Association of America, composed of about 28,000 bakers of this country, all told, who are keenly interested in this question of frozen eggs.

The bakers of the country have been educated up to the use of frozen eggs, and they look with a great deal of concern upon what looks to them as a danger, if they are driven to use shell eggs instead of frozen eggs.

There are many advantages in using frozen eggs as against shell eggs. First is the question of economy. If we are deprived of the use of frozen eggs, it means that we must go into the market and buy shell eggs and bid against the household for eggs, which would advance the price of eggs to the baker very materially. A cent a pound would mean a cent a dozen, and that would have to be carried through into the manufactured product, a cake which is sold throughout the country, and passed over to the consumer, increasing the cost of the cake to the consumer. We can avoid that if we can keep on using frozen eggs.

The other main point is that in the cracking of shell eggs in the bakery, it is a very dangerous piece of work. For illustration, if we should crack a musty egg in this room, we could not crack another egg for quite a long time without suspecting that it also was musty: and one musty egg cracked in a bake shop in the day's work puts under suspicion every piece of goods made in that bakery that day, and will spoil as many other goods and as much other good material as you may happen to have in that particular batch which the musty egg will creep into. That egg will look good, and it is very hard to detect.

So I have come here not only in the interest of our own company, who are large users of frozen eggs, using this year somewhere between 8,000,000 and 10,000,000 pounds—9,000,000 pounds of eggs as a matter of fact.

We ask that we be given one of two remedies: Either that the frozen-egg matter be stricken from this bill or that the time be limited to correspond to the recommendation of the Department of Agriculture, Bureau of Chemistry, permitting eggs to be used for the full period of 24 months.

Mr. PORTER. To what extent would it increase the price of eggs to the household in case the bakers had to go into the shell egg market?

Mr. WARD. At the present time the difference would be between 30 and 35 cents a pound for frozen eggs, as against 67 cents a pound for shell eggs. If we were not permitted at this moment to manufacture our goods from frozen eggs and had to go into the market and buy shell eggs and pay 67 cents for what we are now paying 35 cents for, it would make that much difference in the price of our goods; and that would be for a short period of time only, because, by going into the market, we would decrease the supply of shell eggs for general use.

Mr. PORTER. Is there any advantage in the use of frozen eggs?

Mr. WARD. They are more uniform and safer to use

Mr. PORTER. Assuming that you had to go into the market in the winter when shell eggs were quite scarce, what effect would it have on the egg market?

Mr. WARD. If the bakers went into the market in the wintertime, when shell eggs were scarce, it would advance the cost of living very considerably.

Mr. PORTER. What percentage of the eggs would they use?

Mr. WARD. I could not tell that. We would have to decide on that after we got the eggs into the bakery, and find out what of them were fit to use.

Mr. PORTER. How long have you been using frozen eggs in your business?

Mr. WARD. I should think about 12 or 15 years past.

Mr. PORTER. How many factories have you?

Mr. WARD. Sixteen.

Mr. PORTER. Located in various cities of the United States?

Mr. WARD. Yes; Boston and New York and all the main cities as far west as Chicago.

Senator SMITH of South Carolina. When frozen eggs have come into your factory in the cans, in the course of using them have you ever found any unfit for use?

Mr. WARD. No; I may say that on the whole the frozen egg is one of the most satisfactory things that comes into the bakery for use.

Senator SMITH of South Carolina. You never have found any unfit for use?

Mr. WARD. When they are cracked out of the shell they are frozen solid and kept in that shape, and when they come into our bakery they are still in a hard, frozen state, just like a solid piece of ice, and we take those cans out of the cold-storage house, where they are kept in very low temperatures, kept frozen, and put them into reducing rooms in our bakery, where the egg is reduced down to the natural consistency of the natural egg.

Senator SMITH of South Carolina. What is your experience in the use of them?

Mr. WARD. The frozen egg is a very satisfactory product to use in the bakery. It is sweet, clean, wholesome in every respect, and far safer to use than shell eggs for the bakeshop. These eggs are used far and wide throughout the whole baking industry, throughout the whole country, in all sections of the country.



Mr. HAUGEN. I believe you said you had three suggestions to offer.

Mr. WARD. Two; that is, either that the frozen eggs be taken out of the bill, or that we be given the benefit of the full time of 24 months, as indorsed by our Agricultural Department. If there is any danger at all in the egg being unwholesome, we want to limit it right on that, as bakers. We are interested in having perfect eggs, from the baker's standpoint, from a little different angle that perhaps the country baker it.

Mr. PORTER. What would be the effect on your business if you got hold of bad eggs?

Mr. WARD. It would be disastrous. If we got hold of bad eggs, it would mean a bad product. They say the proof of the pudding is in the eating. The people eat our goods, and if the goods are not right they will not eat them.

Mr. PORTER. So it is a matter of vital importance to have good eggs?

Mr. WARD. Absolutely. It is the life of our business.

Mr. McLAUGHLIN of Michigan. Do you mean that an egg with any taint whatever is noticeable in the product?

Mr. WARD. A musty egg; yes. A musty egg will spoil the whole batch. It will spoil 100 or 200 eggs in the batch, and spoil your butter and sugar and flour and everything else in the mixture. You spoil the entire batch of cake if you use a musty egg.

Mr. McLAUGHLIN of Michigan. Would it not have to be pretty advanced in order to do that?

Mr. WARD. No; a musty egg is quite different from a rotten or otherwise bad egg. A musty egg will come out of a bad nest. That makes the bad, musty egg, as I understand it.

Mr. McLAUGHLIN of Michigan. An egg may be musty and still not rotten?

Mr. WARD. An egg may be musty and yet be perfectly clear and good looking.

Mr. McLAUGHLIN of Michigan. And not show anything wrong in the candling?

Mr. WARD. No; not at all. You might have two eggs in your hand and not know which one of them was musty.

Mr. McLAUGHLIN of Michigan. Or anything in the chemical analysis?

Mr. WARD. I never heard of any chemical analysis that would reach a musty egg. There is no way of discovering it except by opening it, and when it is once opened in a room it puts every egg in sight under suspicion, and it is really a dangerous thing per se, while in the cracking process, in the cracking of the egg before it is frozen, if they find a musty egg they sterilize everything by live steam, which kills that danger.

Mr. McLAUGHLIN of Michigan. Then an egg that is comparatively new and fresh may be musty?

Mr. WARD. Yes.

Mr. McLAUGHLIN of Michigan. Then some of these eggs that the gentleman spoke of in China, coming directly from the places where they were laid, may be musty?

Mr. WARD. Yes; they may be musty.

Mr. McLAUGHLIN of Michigan. Do you think the process of breaking two eggs into a cup would disclose the fact that they are musty?

Mr. WARD. Yes; those cups are all metal cups.

Mr. McLAUGHLIN of Michigan. And then that musty egg being broken there, do you say that the odor would be diffused, so that it would be hard to detect the egg?

Mr. WARD. You would have to sterilize everything that had been used in handling the eggs, and ventilate the room, and get that odor away.

Mr. McLAUGHLIN of Michigan. It has been said that if a musty egg were broken in this room many might be broken after that and we would not be able to distinguish whether or not they were musty.

Mr. WARD. That is true.

Mr. McLAUGHLIN of Michigan. Do you think the process they go through in breaking those eggs in China would detect that?

Mr. WARD. Whether it is in China or in the United States, it is the same.

Mr. McLAUGHLIN of Michigan. And then if they come across musty, what then?

Mr. WARD. No; they sterilize their tools.

Mr. McLAUGHLIN of Michigan. But the odor is in the room.

Mr. WARD. They have got to ventilate that out.

Mr. McLAUGHLIN of Michigan. Do they do that?

Mr. WARD. I should imagine they would, because it would be dangerous to proceed without it.

Mr. McLAUGHLIN of Michigan. Have you been in China?

Mr. WARD. Never.

Mr. McLAUGHLIN of Michigan. Am I right in saying that Chinese eggs have a bad reputation?

Mr. WARD. I think back in the minds of most men, when they refer to fancy eggs, Chinese eggs that are certified 40 years old and upward, there is a kind of nastiness about that in the mind of the average American. In the case we are talking about here you do not have that at all. I remember having a very interesting experience in 1912. I went down through South America and passed through the Straits of Magellan and went on board a ship bound for New York with a cargo of eggs. By the time we got down there the eggs for our table were pretty bad. We got to a little southern town down there in the Straits of Magellan, and I happened to see a sign, "Fresh-laid eggs." I went in and bought some, and found the eggs were fresh and good, and I made the discovery that a fresh-laid hen's egg was pretty much the same, whether down in the Straits of Magellan or up in New York City.

Mr. PORTER. I think the stories we have heard about Chinese eggs arise from the fact that in China an ancient egg is considered quite a delicacy among the Chinese people.

Mr. WARD. Yes; and I think that is what has hurt the idea of importing eggs from China.

Mr. PORTER. They are kept there 10, 20, 30, or 40 years.

Mr. WARD. Yes; but we have no such eggs in mind when we are talking about eggs in the baking industry.

Mr. PORTER. I have eaten some that were guaranteed to be 50 years old, and I found them quite tasteless.

Senator SMITH of South Carolina. Had they been frozen?

Mr. PORTER. No.

Senator GRONNA. With reference to that, let me give you my experience with eggs. I took a dozen eggs five years ago and placed



them in a certain dry place, and nailed up the boards, so that no one could get to them or disturb them. This fall I took those boards down and there was not a thing left of those eggs except the shells, and the linings inside of the shell. They had just walked away. That is one test. You can not keep an egg for five years. It will just walk away from you.

Mr. PORTER. I think the Chinese put some preparation on the outside of the egg.

Senator GRONNA. You can not keep an egg without preparation for probably more than three years. I am just a farmer, and not a scientist, but I have made the test.

Mr. KEITH. May I answer that question?

Senator GRONNA. Yes; we would be very glad to have you tell us something about that.

Mr. KEITH. The Chinese coat those eggs with salt and ashes, and one thing and another, so that they are pretty nearly double the natural size. They keep them in that way for years and years.

Mr. HAUGEN. They are hermetically sealed?

Mr. KEITH. Yes.

#### STATEMENT OF DR. I. C. FRANKLIN, SPECIALIST ON STORAGE, BUREAU OF MARKETS, AGRICULTURE DEPARTMENT.

Mr. PORTER. Dr. Franklin, please state your official position.

Dr. FRANKLIN. I am specialist on storage in the Bureau of Markets, United States Department of Agriculture.

Mr. PORTER. How long have you held that position?

Dr. FRANKLIN. About four years.

Mr. PORTER. You have heard the testimony here this evening. Can you throw any additional light upon this matter?

Dr. FRANKLIN. I might speak of the volume of the business.

Mr. PORTER. Yes; we would like to have that.

Dr. FRANKLIN. And with reference to that, I have made some charts showing the cold-storage stocks. On this chart the vertical lines divide the years. You will see marked at the bottom 1917, 1918, 1919, and 1920.

The horizontal lines segregate the sections into millions of pounds, starting at zero, 5,000,000, 10,000,000, 15,000,000, and 20,000,000.

Our first record of stocks was taken January 1, 1917, as noted on the chart.

Taking the chart in general you will see an average upward trend of the amounts. The last point on the chart under the year 1920 is for December 1 of that year and shows the maximum of stocks on hand at that time of 29,824,000 pounds.

Senator GRONNA. That is more frozen eggs than we have had at any one time in the years 1917, 1918, or 1919.

Dr. FRANKLIN. Yes.

Mr. PORTER. Now as to the wholesomeness of the eggs?

Dr. FRANKLIN. Before we come to that I have another chart which shows the volume of imports of frozen and dried eggs.

This chart shows, by years, 1917, 1918, 1919, and 1920, divided by the vertical lines, and the horizontal lines starting with zero and making upward, 5,000,000 and 10,000,000.

In looking at this chart please disregard the solid lines as drawn in there and take into consideration only the broken line, which is the line of imports by months during those years.

In an examination of that please note that in 1917 the average of imports moves along rather on a level, declining somewhat in 1918 to September 1, when it drops to zero, and September, October, November, and December continues at zero, and on January 1, 1919, increases again. There was some difficulty in shipping that occasioned that drop to zero, so that those who were packing found it impossible to import into this country.

Now, going on over into 1919, we find a rather even trend until along in the fall, where you will find a mountain peak, and that is occasioned by one cargo coming in amounting to 8,835,000 pounds.

Again, in October this year, about 10,000,000 pounds in one cargo.

Now, going back to that cold-storage stock report, you will see the reflex of those heavy imports in this jump here and in this jump here.

Mr. PORTER. Before you leave that subject, the slump in the market has resulted in the overstocking of the dealers in frozen eggs, just like in every other business, has it not?

Dr. FRANKLIN. I think that is true, but I want to go further on before I take that up.

For the year 1916 the imports of frozen eggs totaled 8,126,583 pounds.

For 1917 the total was 12,085,094 pounds.

For 1918 it was 4,191,791 pounds.

In 1919 it was 14,415,805 pounds.

In 1920 this last year up to December 1—this is a conservative figure which is under the mark; I do not know just what the mark is—approximately 27,088,279 pounds.

Those imports bear out this upward trend of cold-storage stocks.

Mr. HAUGEN. An increase of about 100 per cent last year?

Dr. FRANKLIN. It increased almost that.

Now, about three months ago I tried to secure figures as to the domestic production of frozen eggs, and I had reports sent in from the some fifty concerns who are in the business in this country.

The amount that was broken out in 1919 of the domestic pack was approximately 15,000,000 pounds.

In 1920, up until December 1, it was about 16,000,000 pounds.

I want to show you the processes I went through to secure the consumption. I will give you the formula.

I took the stock at the beginning of the year. To that I added the imports and the domestic production and subtracted the stock on hand at the end of the year—the first of the next year. Now, that should give us with relative accuracy the consumption in the country, barring one figure, and that is the export. But fortunately in this case the export does not run over 100,000 pounds, so that it is negligible.

Senator SMITH of South Carolina. Is that true of a period of years?

Dr. FRANKLIN. Yes, it is: so that that figure is practically negligible.

So that taking that as a basis, and the 15,000,000 domestic production for 1919, the domestic consumption is approximately 19,500,000 pounds, but in 1920 the domestic consumption was 32,000,000 pounds.



Now going back to 1917——

Senator SMITH of South Carolina. One minute. You say in 1919 the domestic consumption was 15,000,000 pounds?

Dr. FRANKLIN. The production.

Mr. HAUGEN. Of frozen eggs?

Dr. FRANKLIN. Yes; but the consumption in 1919 was 19,500,000 pounds of frozen eggs.

Senator SMITH of South Carolina. And in 1920 how much?

Dr. FRANKLIN. Thirty-two million pounds.

Mr. HAUGEN. We imported 28,000,000.

Dr. FRANKLIN. We imported 27,000,000 pounds.

Senator GRONNA. And we froze 16,000,000 pounds in this country, which would be a stock of about 45,000,000 pounds. Is that correct?

Dr. FRANKLIN. Yes. The stock was 29,000,000 on December 1. We had a stock of frozen eggs on December 1 of 29,824,000 pounds or about 30,824,000 pounds.

The interesting feature that might be brought out there is that the stock on December 1 represents practically a year's supply; that is on the basis of the consumption of 32,000,000 pounds for 1920, which may not be maintained.

Senator SMITH of South Carolina. You have on hand now, beginning with the calendar year, a year's supply on hand.

Dr. FRANKLIN. Yes; about 30,000,000 pounds, with a consumption in 1920 of 32,000,000 pounds.

Mr. PORTER. You do not expect the consumption in 1921 to be nearly so great as in 1920, do you?

Dr. FRANKLIN. I am not a prophet.

Mr. PORTER. As a matter of fact frozen eggs are used in articles of food that are more or less luxuries, cakes and ice cream, etc.? During 1920 people had lots of money and ate lots of cakes and lots of ice cream, and the industrial situation in Pittsburg indicates that they are not going to eat very much cake in the coming year.

Dr. FRANKLIN. Of course you have a right to your opinion, and your opinion might be justified by the argument you present now, but I would not form a judgment on a matter of that kind at all. I deal with facts rather than opinions.

Senator SMITH of South Carolina. The point you are making is that we are beginning the consumption year with an amount in storage almost equal to the previous year's consumption, and that if this bill is unchanged and the volume of importation and domestic production of these frozen eggs continues in anything like that volume during this year, somebody will have a surplus on the market, and will have to dump some. That is the point you are getting at, is it not?

Dr. FRANKLIN. I am just stating the facts, Senator, leaving the matter entirely to your own conclusions. I think that is probably the better plan.

Mr. HAUGEN. We have on hand an amount of stock equal to the last year's consumption?

Dr. FRANKLIN. Practically so, and very much greater than was the consumption in 1919. The consumption in 1919 was only 19,500,000 pounds.

Senator GRONNA. Do you care to make any comment as to how much time should be given to these people?

Dr. FRANKLIN. I do not think I would at this time.

Senator GRONNA. If I may be pardoned for saying it, this bill has for its primary object two things in view. That is my understanding of it. We want to prevent hoarding of the necessary food articles. That is the first object. Secondly, we want to preserve the health of the people. Of course, both those objects are important.

Now, I have given this bill some thought, and it was my impression that if we had the right to legislate on this question and to say that food shall not be kept beyond a certain period of time, that necessarily will force that article of food onto the market and give the people a chance to buy it. It will prevent hoarding. Now, as to the question of whether the food is wholesome after being kept beyond a certain period, of course, that is a question for scientists to discuss.

Mr. PORTER. Ought we not to draw this distinction in regard to frozen eggs? Assume that there is a surplus of shell eggs. The price is reduced, and there is always a market. But there is only one market for frozen eggs, and that is largely made up of the bakeries, and the bakeries can only use a certain number of pounds of eggs a year, and you could not give them away beyond that. It is just like any other article that goes into the cake, or whatever they are manufacturing. There is quite a difference between an article of this kind and an ordinary article of consumption.

Senator GRONNA. That is true.

Mr. PORTER. The market never increases by reason of the lowering of the price.

Senator GRONNA. That is true, but if we permit these people to have a lot of frozen eggs, we take off the market a lot of eggs which might be consumed in the shell and in that way enhance the price.

Mr. PORTER. There would be nothing to be gained by doing that, because the eggs in the shell sell at a very much higher price than the frozen eggs.

Senator GRONNA. Supposing we have 100,000,000 dozen eggs and we allow these gentlemen who are in this business to take 25,000,000 dozen eggs and freeze them. Now, that takes 25,000,000 dozen off the market. There will be about 75,000,000 dozen left. Of course, that will affect the price.

Mr. PORTER. Affect the price of the shell eggs?

Senator GRONNA. Yes.

Mr. PORTER. But that is no advantage to them. They are selling the frozen eggs.

Senator GRONNA. But if by legislation we say that the frozen eggs shall be kept only one year, there will not be as large a supply of frozen eggs as if we say, "You can keep them as long as you want to, or you can keep them two years."

Mr. PORTER. The testimony here seems to indicate that if the limit is fixed at one year the foreigners will not be able to come into the market, and that would necessitate the packing of domestic eggs, and freezing them, and that would have the very effect that you indicate. Pardon me for interrupting you, Dr. Franklin.

Dr. FRANKLIN. I do not know that I have anything further to say about these stocks. It is evident that you have stocks on hand now that, without breaking any eggs at all, will last until the fall of next year.



is only fair to say that this is a commodity that only moves into very restricted channels.

Mr. HAUGEN. If you limit to 12 months, that will simply shut out every egg from China.

Dr. FRANKLIN. I would not say so.

Mr. HAUGEN. Practically so, because we have a supply, and it would have to be kept over.

Dr. FRANKLIN. No. But we have not a domestic supply that would be sufficient for our needs, I think, in that class of eggs. I will call attention to one very pertinent fact in connection with that. Of the eggs that are coming to market, 30 dozen to the case, on an average  $18\frac{1}{2}$  eggs in each case are checked, cracked, or leakers. That is practically a dozen and a half eggs to the 30-dozen case.

Mr. HAUGEN. Five per cent.

Dr. FRANKLIN. And furthermore you have in addition to that a certain amount of dirty eggs. Now, that is the breaking stock that we have, and was the basis for the beginning of this business. Now, we have not a sufficient quantity of that class of stock to take care of our growing consumption of frozen eggs. That is evidenced by the condition here, and is evidenced by the amount of domestic production and domestic consumption, one compared against the other; so that for that cheaper commodity it does seem necessary to import, to bring in stock from outside the United States which does not affect in a direct way our market on our shell eggs ordinarily.

Senator GRONNA. As I understand this chart, Dr. Franklin, the people engaged in this business freeze about 15,000,000 or 16,000,000 pounds here in this country.

Dr. FRANKLIN. Yes.

Senator GRONNA. And we consume on an average probably some 30,000,000 pounds. I am leaving out the supply on hand just now.

Dr. FRANKLIN. That was the approximate consumption for 1920.

Senator GRONNA. But that would leave on an average about half, or about the same percentage of importation that we freeze in this country.

Dr. FRANKLIN. That is if the consumption remains at that high point. That, of course, is problematical.

Mr. HAUGEN. Have you the figures of production?

Dr. FRANKLIN. Of shell eggs?

Mr. HAUGEN. Altogether.

Dr. FRANKLIN. No; I have not. I think that is estimated to be about 25,000,000,000 dozen.

Mr. HAUGEN. About 100,000,000 cases, is it not?

Dr. FRANKLIN. That figure is beyond me. I do not know.

Senator SMITH of South Carolina. Doctor, aside from any question of hoarding or any question of supply, what would you say when eggs are frozen fresh in good condition is the length of time that they can be kept in that condition and still be entirely wholesome and useful for food?

Dr. FRANKLIN. The department has gone on record on that in two separate instances, that they are good and wholesome up to two years. Beyond that the department has not made any statement on the matter. That is 24 months.

Senator SMITH of South Carolina. You do not know of any investigation they have made as to the condition after two years?



Dr. FRANKLIN. No; I do not believe that they have ever made investigation on any period beyond that time. In fact, the evidence would seem to show that at the end of two years there is beginning to be a perceptible breaking down, due to the albumen changing to a watery substance. The point you made a while ago, Congressman McLaughlin, that there was a change going on, is very evident in all the investigations that have been made, that the change starts at the time that the egg is laid and it continues, but when the egg is placed in cold storage that change is retarded. The bacterial change is retarded.

Senator SMITH of South Carolina. When the imported eggs arrive here the test is made. Then that stock is placed in cold storage. Are there any subsequent tests made in the places where the eggs are kept, so as to detect whether or not any have been carried beyond the two-year period?

Dr. FRANKLIN. No; there would not be any occasion for it except under the State law, where there is a limitation under the State law. It would not be necessary by the Federal Government, except that they would be examined from time to time to see that they were wholesome, under the food and drugs act.

Senator SMITH of South Carolina. The point I was getting at was that I was not clear as to whether after you made the initial inspection on arrival and they went into cold storage in places owned by these gentlemen who are going to use them or sell them, there was any subsequent test made as to their age and wholesomeness.

Dr. FRANKLIN. That work is entirely carried on under the jurisdiction of the Bureau of Chemistry, and I am quite certain efficiently so.

Senator SMITH of South Carolina. Let me ask one question so as to get this clear in my mind, because it is important to me. These eggs are put in storage. They are inspected on arrival and put in storage and they are sold from time to time. They are not all sold as soon as they come in. They are not shipped out. They are kept there and disposed of as the market absorbs them. Now, do you inspect them on sale?

Dr. FRANKLIN. No; we do not inspect them at all, but the inspectors of the Bureau of Chemistry, under the food and drugs act, and the State inspectors do inspect them, but the Bureau of Markets does not.

Senator SMITH of South Carolina. On sale?

Dr. FRANKLIN. No; they inspect the warehouses from time to time.

Senator SMITH of South Carolina. At stated periods?

Dr. FRANKLIN. No; not at any stated periods at all. It is a hit-and-miss proposition. It is not safe to go at stated periods.

Senator SMITH of South Carolina. The point I am making is, do they inspect sufficiently frequently to see that there is no stock carried beyond the period of wholesomeness?

Dr. FRANKLIN. Yes; I would say that that is true.

Senator GRONNA. Where they have a State law?

Dr. FRANKLIN. Where they have a State law.

Senator GRONNA. Providing for cold storage?

Dr. FRANKLIN. Yes; where the State law provides for that sort of thing. Not only that, but in States also where the Federal Government can come in under the food and drugs act, and that means any stock moving in commerce, of course.



Mr. McLAUGHLIN of Michigan. There is a business of freezing eggs in this country, the home production, and that breaking and freezing is confined largely to eggs that have suffered some little damage.

Dr. FRANKLIN. Physical damage, largely.

Mr. McLAUGHLIN of Michigan. Eggs that have deteriorated a little, in appearance, and so on, with some measure of deterioration in the eggs that are broken and frozen in this country. But that business, I understand, is not done by any gentleman who has testified to-night.

Dr. FRANKLIN. Oh, yes; that business is carried on by some of the gentlemen who have testified to-night. They break checked and cracked eggs in this country.

Mr. McLAUGHLIN of Michigan. I thought they used only perfect eggs.

Dr. FRANKLIN. Oh, no; the breaking stock in this country, as Mr. Keith testified, is that class of stock.

Senator SMITH of South Carolina. Doctor, you have no Federal law pertaining to the age of this stock?

Dr. FRANKLIN. No, sir.

Senator SMITH of South Carolina. Are there any State laws that pertain to that?

Dr. FRANKLIN. Oh, yes. There are several State laws. There is a record of them in the hearings of the House committee.

Senator SMITH of South Carolina. This was to unify and make uniform the laws in all the States in reference to the age of the cold-storage unit, whatever it might be.

Dr. FRANKLIN. Just so. And in that connection, aside from the point under discussion, I would like to call your attention to a letter received from the officers who are administering the New York State law within the last month, who are contemplating changing their law, and say that they do not want to change their law until the Federal law is enacted, so that they can build their law to conform to it and supplement it.

Senator SMITH of South Carolina. Do you know in what respect they desire to change that law?

Dr. FRANKLIN. No; I can not say that definitely, because they do not say definitely in what respect. But in the present law which they have, which was enacted within the last year, they followed the pending bill in two separate sections, quoted almost verbatim from the pending bill, but they changed it in some other form, and they are having some administrative troubles. They have not confessed just what those are.

Senator SMITH of South Carolina. You do not know whether it was to lengthen the time or to shorten it?

Dr. FRANKLIN. I do not think the question of limit was in the matter at all. Their limit is placed at 12 months, as per the pending bill.

Mr. McLAUGHLIN of Michigan. What, in your opinion, is the best manner of describing the kind of product to be included within the law, to make it inclusive or exclusive, in these State laws that you have examined?

Dr. FRANKLIN. It is my notion that the States that have stated specifically the items of foodstuffs which are controlled under the law have had less administrative difficulties than those that have gone



at the definition in a rather indirect approach. Does that answer your question?

Mr. McLAUGHLIN of Michigan. Yes.

Senator SMITH of South Carolina. As I understood your question, do you mean to name those that are excluded or those that are included? Which one of the two is the better?

Mr. McLAUGHLIN of Michigan. Dr. Franklin says he thinks the law works best which is inclusive, which names those that are included.

Dr. FRANKLIN. That is one of the difficulties, as I understood, which has arisen in the New York law. They have made an indirect approach to their division or distinction of articles of food, and by so doing did not exclude some of the things they wanted to, and now they are forced to require marking on cereals, breakfast foods, and a variety of things of that sort in cold storage which, of course, are not contemplated in any law of that kind, but it causes them difficulty and is rather embarrassing to administrative officers.

Mr. McLAUGHLIN of Michigan. I am very much pleased to hear these gentlemen testify as to the care they take in excluding everything that can possibly do any harm, every egg that is defective or tainted in any way to any degree whatever. In your experience do you find that that practice is followed as closely by all those who break and freeze eggs as has been described here to-night?

Dr. FRANKLIN. Your question is quite far-reaching when you say "all." I am inclined to believe that if you had the reports of the New York State commissioner of markets, just recently issued, he would show you several prosecutions within the last year under phases of that sort.

Mr. McLAUGHLIN of Michigan. Prosecutions for what?

Dr. FRANKLIN. Prosecutions for the placing of deteriorated eggs in the frozen product. However, I want to carry that further and say that the houses that I have been in and have examined, which many of them are houses representing the larger amount of production, are houses that are very careful in how they proceed in their breaking processes, and it is true that in these houses they have trained their help so that they are exceedingly expert in detecting eggs that are not perfectly fresh, and their processes are very like those described here by the gentlemen who have testified to-night. They have sterilizing devices, and I have seen them used. They have ventilation devices for ventilating the room, and in many cases the rooms in which the breaking process takes place are refrigerated, and the air is clarified and kept pure and under the most wholesome condition. That is a development that has grown within the last seven or eight years, due to the enforcement of the food and drugs act and the inspection of those buildings by the members of the corps in the Department of Agriculture who have those things in hand.

Mr. PORTER. I have nothing further.

Senator GRONNA. Are there any questions you wish to ask?

Senator SMITH of South Carolina. No.

Senator GRONNA. We are very much obliged to you.

Mr. PORTER. That is all we have to present. We appreciate the kindness of the conferees in hearing us at this late hour.

Senator GRONNA. Then we will adjourn.

(Whereupon, at 10.35 o'clock p. m., the joint committee adjourned to meet at the call of the chairman.)